1161-05-117   **Chun-Hung Liu*** (`chliu@math.tamu.edu`). *Asymptotic dimension of minor-closed families and beyond.*

The asymptotic dimension of metric spaces is an important notion in geometric group theory introduced by Gromov. The metric spaces considered in this talk are the ones whose underlying spaces are the vertex-sets of graphs and whose metrics are the distance functions in graphs. A standard compactness argument shows that it suffices to consider the asymptotic dimension of classes of finite graphs.

In this talk we prove that the asymptotic dimension of any minor-closed family, any class of graphs of bounded tree-width, and any class of graphs of bounded layered tree-width are at most 2, 1, and 2, respectively. The first result solves a question of Fujiwara and Papasoglu; the second and third results solve a number of questions of Bonamy, Bousquet, Esperet, Groenland, Pirot and Scott. These bounds for asymptotic dimension are optimal and improve a number of results in the literature. (Received August 14, 2020)